

**V.C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2014**

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**I. Introduction and Summary****A. Introduction**

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This quarterly report is submitted by South Carolina Electric & Gas Company (SCE&G or the Company) to the Public Service Commission of South Carolina (the Commission) and the South Carolina Office of Regulatory Staff (ORS). It is submitted in satisfaction of the requirements of S.C. Code Ann. § 58-33-277 (Supp. 2013) and the terms of Commission Order No. 2009-104(A). This report provides updated information concerning the status of the construction of V.C. Summer Nuclear Station (VCSNS) Units 2 & 3 (the Units) and provides the current capital cost forecasts and construction schedules for the Units as of the close of the quarter. In Order No. 2012-884 dated November 15, 2012, the Commission approved updated construction and capital cost schedules for the Units. This report provides a comparison of the current schedules and forecasts against those approved in Order No. 2012-884.

**B. Structure of Report and Appendices**

The current reporting period is the quarter ending September 30, 2014. The report is divided into the following sections:

Section I: Introduction and Summary;

Section II: Progress of Construction of the Units;

Section III: Anticipated Construction Schedules;

Section IV: Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B)(6) (the Inflation Indices);

Section V: Updated Schedule of Anticipated Capital Costs; and

Section VI: Conclusion.

**Appendices 1, 2, and 4** to this report contain detailed financial, milestone and other information updating the schedules approved by the Commission in Order No. 2012-884. For reference purposes, **Appendix 3** provides a copy of the capital cost schedule for the project as approved in Order No. 2012-884. **Appendix 5** provides a list of the License Amendment Requests (LARs) filed by SCE&G with the Nuclear Regulatory Commission (NRC).

A confidential and a public version of this report and its attachments are being provided. Unless otherwise specified, all cost information reflects SCE&G's 55% share of the project's cost in 2007 dollars. Attached to the end of the report is a glossary of acronyms and defined terms used.

### **C. Construction Schedule and Milestones**

As the report indicates, the Company has met all current construction milestones approved by the Commission in Order No. 2012-884, taking into account the contingencies authorized in Order No. 2009-104(A). As reported on Appendix 1, page 15, two future equipment milestones, both related to the fabrication of the Reactor Coolant Pumps, have been delayed by between 19 and 26 months, but no impact on the construction schedule is anticipated from this delay. SCE&G anticipates updating all construction milestone completion dates when the Revised Fully Integrated Construction Schedule has been reviewed and approved. In summary, there are 146 specific milestones for reporting purposes. As of September 30, 2014, 100 have been completed. Comparing the scheduled milestone completion dates, as of the date of this report, to the milestone completion dates approved by the Commission in Order No. 2012-884, the completion dates of 44 milestones have changed. Of these, one has been accelerated and 43 have been delayed for between 2 and 26 months.

**The Unit 2 and Unit 3 Construction Schedules.** During the third quarter of 2013, WEC/CB&I (the Consortium) provided SCE&G with revised Unit 2 and Unit 3 construction schedules (Revised Unit 2 and Unit 3 Schedules) which were based on a reevaluation of the submodule production schedule at the CB&I facility in Lake Charles, LA. Based on these schedules, it was anticipated that Units 2 and 3 would be completed in the last quarters of 2017 and 2018 or the first quarters of 2018 and 2019, respectively. From the perspective of the Engineering, Procurement and Construction Contract (EPC Contract) as amended between SCE&G and WEC/CB&I, SCE&G has not agreed to these schedule changes and advised WEC/CB&I that it remained obligated to satisfy the dates previously agreed to in the EPC Contract.

During the fourth quarter of 2013, the Consortium began a full re-baselining of the Unit 2 and Unit 3 construction schedules to incorporate a more detailed evaluation of the engineering and procurement activities necessary to accomplish the schedules and to provide a detailed reassessment of the impact of the Revised Unit 2 and Unit 3 Schedules on engineering and design resource allocations, procurement, construction work crew

efficiencies, and other items. The result will be a revised fully integrated project schedule with timing of specific construction activities along with detailed information on budget, cost and cash flow requirements (Revised Fully Integrated Construction Schedule). While this detailed re-baselining of construction schedules has not been completed, in August 2014, SCE&G received preliminary information in which the Consortium has indicated that the substantial completion of Unit 2 is expected to occur in late 2018 or the first half of 2019 and that the substantial completion of Unit 3 may be approximately 12 months later. These expected substantial completion dates do not reflect all efforts that may be possible to mitigate delay. Further, based on the preliminary schedule information arising from the re-baselining effort, the completion dates for a number of milestones are expected to extend beyond the 18-month contingency period. The scheduling changes included in this preliminary information remain under review and have not been accepted by SCE&G. SCE&G anticipates that the revised schedule and the cost estimate at completion will be finalized sometime in 2015.

During the period, the Consortium provided preliminary cost estimates principally related to the delays for non-firm and non-fixed scopes of work to achieve the late 2018 substantial completion date for Unit 2. SCE&G's 55% portion of this preliminary estimate is approximately \$660 million. This figure is presented in 2007 dollars and would be subject to escalation. It also excludes any Owners cost amounts associated with delays which could be significant. Further, this figure does not reflect consideration of liquidated damages provisions of the EPC Contract which would partly mitigate any such delay-related costs. The Consortium's preliminary schedule and the cost estimate information have not been accepted by SCE&G and are under review. It is anticipated that further study, evaluation and negotiations will occur. SCE&G plans to reevaluate and reschedule its Owners cost estimates and cash flow requirements in light of that new schedule when it is finalized. Upon completion of the re-baselining and the finalization of the revised schedule and cost estimate at completion, SCE&G expects to petition the Commission for an order to update the Base Load Review Act (BLRA) construction milestone and capital cost estimate schedules for the project as the BLRA permits.

**Milestone Schedules.** The anticipated milestone completion dates presented in this report related to construction activities reflect the completion dates contained in the Revised Unit 2 and Unit 3 Schedules as updated through the project report that WEC/CB&I provided to SCE&G in February of 2014.

SCE&G anticipates updating all construction milestone completion dates when the Revised Fully Integrated Construction Schedule has been reviewed and approved. Pending completion of this review, the Revised Unit 2 and Unit 3 Schedules, as updated through the project report that WEC/CB&I provided to SCE&G in February 2014, remain the current approved and definitive schedule for the project. This is the schedule on which mid- and long-term project construction milestones are based in this report. As to near-term milestones, WEC/CB&I provides updates on these activities on an ongoing basis, and the associated milestones are updated when relevant and definitive information is

received from WEC/CB&I indicating a change. Equipment milestone dates are updated routinely as definitive information is received from equipment fabricators, suppliers and shippers. The equipment milestone dates reported here reflect the most current, updated information.

#### **D. Construction Costs and Cost Forecasts**

Spending through December 31, 2014, in current dollars is forecasted to be approximately \$861 million less than the capital cost schedule approved in Order No. 2012-884. The present cash flow forecast indicates that the Company will be able to complete the Units for \$4.548 billion in 2007 dollars, which is the amount approved in Order No. 2012-884. This, of course, does not include consideration for the negotiations ongoing relative to the new schedule and cost information. The current cost estimates include changes in timing of costs and minor shifts in costs among cost categories that occur in the normal course of managing the project. All amounts set forth in this Quarterly Report are based on SCE&G's existing 55% interest, except where expressly stated to be based upon 100% of the cost.

**Cash Flow Forecasts and the Revised Unit 2 and Unit 3 Schedules.** The cash flow forecasts provided in this report reflect changes in the timing of certain payments to WEC/CB&I based on the Revised Unit 2 and Unit 3 Schedules. Although the timing of cash flows has been revised, no increases in costs in 2007 dollars resulting from the Revised Unit 2 and Unit 3 Schedules or the information received in August 2014 are included in the cash flow estimates provided in this report.

**Cost Comparisons.** In Order No. 2009-104(A), the Commission recognized that forecasts of Allowance for Funds Used During Construction (AFUDC) and escalation would vary over the course of the project and required those forecasts to be updated with each quarterly report. Escalation indices were issued in October 2014 for the period of January through June 2014 and have been used in forecasting the construction costs for the project that are presented here.

**Chart A** below compares the current capital cost forecast to the forecast presented in the last quarterly report. This chart shows an increase in Gross Construction Costs of \$190.2 million over the life of the project. With each quarterly update, a quarter that had been subject to the five-year escalation rate becomes subject to the one-year rate. The figures reported on **Chart A** also include the effect of calculating escalation on an updated cash flow projection for the project.

**Chart A: Reconciliation of Capital Cost (\$000)**

<u>Forecast Item</u>	<u>Projected @ 09/30/14 (Five-Year Average Escalation Rates)</u>	<u>Projected @ 06/30/14 (Five-Year Average Escalation Rates)</u>	<u>Change</u>
Gross Construction	\$5,796,907	\$5,606,679	\$190,228
Less: AFUDC	\$272,377	\$265,589	\$6,788
Total Project Cash Flow	\$5,524,530	\$5,341,090	\$183,440
Less: Escalation	\$976,125	\$792,685	\$183,440
<b>Capital Cost, 2007 Dollars</b>	<b>\$4,548,405</b>	<b>\$4,548,405</b>	<b>\$0</b>

**Chart B** compares the current capital cost forecast to the forecast on which the Commission relied in adopting Order No. 2012-884. Chart B shows that the forecasted capital cost of the Units in 2007 dollars has not changed. Due to the changes in forecasted escalation and AFUDC (see Section I.F. below) the cost of the plant in future dollars has increased by approximately \$42 million since Order No. 2012-884 was issued.

**Chart B: Reconciliation of Capital Cost (\$000)**

<u>Forecast Item</u>	<u>Projected @ 09/30/14 (Five-Year Average Escalation Rates)</u>	<u>As Forecasted and Approved In Order 2012-884</u>	<u>Change</u>
Gross Construction	\$5,796,907	\$5,754,565	\$42,342
Less: AFUDC	\$272,377	\$237,715	\$34,662
Total Project Cash Flow	\$5,524,530	\$5,516,849	\$7,681
Less: Escalation	\$976,125	\$968,444	\$7,681
<b>Capital Cost, 2007 Dollars</b>	<b>\$4,548,405</b>	<b>\$4,548,405</b>	<b>\$0</b>

**Chart C** below shows the current forecasts of the cost of the Units compared to the cost forecasts underlying the initial BLRA order, which was issued by the Commission in 2009, and the update orders that the Commission issued subsequently. The decline in capital cost forecasts in 2007 dollars between Order No. 2010-12 and 2011-345 reflects the removal of Owner's contingency amounts from the forecasts as required by the opinion of the Supreme Court of South Carolina in *South Carolina Energy Users Comm. v. South Carolina Pub. Serv. Comm'n*, 388 S.C. 486, 697 S.E.2d 587 (2010). This chart shows that while the cost of the project in 2007 dollars has increased by \$13 million since the initial forecasts, the cost of the project in future dollars is approximately \$516 million below the initial forecast.

**Chart C: Summary of Nuclear Filings (billions of \$)**

<b><u>Forecast Item</u></b>	<b><u>Order No. 2009-104(A)</u></b>	<b><u>Order No. 2010-12</u></b>	<b><u>Order No. 2011-345</u></b>	<b><u>Order No. 2012-884</u></b>	<b><u>Projected @ 09/30/2014</u></b>
Capital Cost, 2007 Dollars	\$4.535	\$4.535	\$4.270	\$4.548	<b>\$4.548</b>
Escalation	\$1.514	\$2.025	\$1.261	\$0.968	<b>\$0.976</b>
Total Project Cash Flow	\$6.049	\$6.560	\$5.531	\$5.517	<b>\$5.524</b>
AFUDC	\$0.264	\$0.316	\$0.256	\$0.238	<b>\$0.272</b>
<b>Gross Construction</b>	<b>\$6.313</b>	<b>\$6.875</b>	<b>\$5.787</b>	<b>\$5.755</b>	<b>\$5.797</b>

#### **E. Escalation Rates**

As provided in Order No. 2009-104(A), the most current one-year inflation indices are used to escalate costs occurring in the twelve-month period after the date of each quarterly report. The most current escalation indices are found in the Handy-Whitman July 2014 update which was issued in October 2014 and reports data for the period January through June 2014. Those rates are reflected in this report. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. The forecasted costs provided here reflect SCE&G's calculations related to the WEC/CB&I Claims, which change the index applicable to Firm with Indexed Adjustment

cost categories going forward from a floating Handy-Whitman adjustment to a fixed rate for the life of the project.

As shown on **Appendix 4**, utility construction cost escalation rates were at historically high levels during the period 2005-2008, and have since dropped. Current escalation rates are shown below on **Chart D**. When compared to the previous Handy-Whitman release, the most recent update shows an upward trend in the one-year and five-year average rates.

**Chart D: Handy-Whitman Escalation Rates**

<b><u>Escalation Rate Comparison</u></b>		
	<b>July-Dec 2013</b>	<b>Jan-June 2014</b>
<b><u>HW All Steam Index:</u></b>		
One-Year Rate	<b>(1.15%)</b>	<b>2.52%</b>
Five-Year Average	<b>2.05%</b>	<b>3.21%</b>
Ten-Year Average	<b>4.62%</b>	<b>4.35%</b>
<b><u>HW All Steam/Nuclear Index:</u></b>		
One-Year Rate	<b>(1.32%)</b>	<b>2.52%</b>
Five-Year Average	<b>2.09%</b>	<b>3.21%</b>
Ten-Year Average	<b>4.65%</b>	<b>4.38%</b>
<b><u>HW All Transmission Plant Index:</u></b>		
One-Year Rate	<b>(0.34%)</b>	<b>1.68%</b>
Five-Year Average	<b>0.55%</b>	<b>2.63%</b>
Ten-Year Average	<b>4.57%</b>	<b>4.05%</b>

#### **F. AFUDC**

Consistent with Order No. 2009-104(A), SCE&G computes AFUDC based on the Federal Energy Regulatory Commission (FERC) approved methodology as applied to the balance of Construction Work in Progress (CWIP) that is outstanding between rate adjustments. SCE&G's projected AFUDC rate is currently 7.27%, compared to the rate of 5.28% that applied when Order No. 2012-884 was issued.

### **G. Compliance with the Commission-Approved Cumulative Project Cash Flow Target**

The current Cumulative Project Cash Flow target for the project was adopted by the Commission in Order No. 2012-884. In Order No. 2009-104(A), the Commission provided that the applicable Cumulative Project Cash Flow target would be adjusted with each quarterly report to reflect updated escalation data.

**Appendix 2** provides the Commission-approved Cumulative Project Cash Flow target updated for current escalation data. The cash flow targets through June of 2014 have been updated to reflect actual escalation rates. The cash flow targets for the third quarter of 2014 and beyond have been updated based on the most recently available inflation indices, which for purposes of this report, are the indices provided in October 2014 that report data for the period January through June of 2014. When final actual indices for 2014 become available, the cash flow data for 2014 will be revised to reflect the actual escalation rates.

**Appendix 2** compares the approved Cumulative Project Cash Flow target to the current cumulative cash flow schedules for the project, which include actual costs where available and SCE&G's working forecasts of annual cash flows for future years. In addition, the project cash flow targets presented on **Appendix 2** for 2012 have been adjusted to reflect timing differences between the billing methodology under the EPC Contract and the calculation of the escalated cash flow targets under Order No. 2009-104(A). Under the EPC Contract, for periods where actual escalation rates are not available, WEC/CB&I bills SCE&G based on a rolling 2-year average of the applicable Handy-Whitman rate and provides adjustments to reflect the actual rate when it is known. An adjustment has been made to **Appendix 2** target calculations to offset the timing differences that arise as a result of WEC/CB&I's approach to estimated billings and credits. This adjustment applies to those EPC Contract cost categories that are subject to indexed escalation.

### **H. Nuclear Production Tax Credits**

In August 2014, the Internal Revenue Service notified SCE&G that, subject to a national megawatt capacity limitation, the electricity to be produced by each of the Units would qualify for nuclear production tax credits under Section 45J of the Internal Revenue Code to the extent that the Units are operational before January 1, 2021, and other eligibility requirements are met. To the extent that production tax credits are realized, their benefits are expected to be provided to SCE&G's electric customers.



## **II. Progress of Construction of the Units**

### **A. Construction**

The project continues to maintain an excellent safety record that exceeds industry expectations for projects of comparable size.

Progress continues at a steady pace in the multiple areas that constitute the project. The critical path for Unit 2 continues to run through the final, in-place fabrication work remaining on the CA20 module followed by placement of concrete to support the Shield Building for that Unit, the receipt of CA01 submodules and the successful assembly and setting in place of the CA01 module. The critical path for Unit 3 continues to run through the successful fabrication and setting in place of the CA20 module followed by the receipt of CA01 submodules and the successful assembly and setting in place of the CA01 module.

#### **1. Unit 2 Nuclear Island (NI)**

During the period, WEC/CB&I placed a 16 foot high “wedge” of concrete between CA20 and the Shield Building. Placement of this concrete had been deferred until the placement of CA20. Outfitting of CA20 continued to ready the module for the placement of the concrete within the steel structures that form the framework for its walls. Work continued to fabricate and attach the anchor blocks that will anchor CA20 to the Unit 2 Nuclear Island basemat. The installation of rebar and piping, and the placement of concrete continued in the interior and exterior walls of the Unit 2 NI Auxiliary Building. Rebar installation began on the fourth of six total layers of concrete to be placed on top of the Unit 2 NI basemat, upon which the Unit 2 Shield Building panels will be installed.

As was reported in the Second Quarter 2014 Report, at the beginning of the period, the NRC approved LAR 14-01 which pertains to the design of certain aspects of the Unit 2 Auxiliary Building interior walls and floors. In the prior period, the NRC had approved a Preliminary Amendment Request (PAR) related to LAR 14-01. The PAR allowed work to proceed to install rebar on the interior and exterior concrete walls of the Auxiliary Building.

#### **2. Unit 3 Nuclear Island**

The installation of rebar and the placement of concrete continued during the period for sections of the interior walls of the Unit 3 NI Auxiliary Building. The installation of rebar for the Unit 3 Shield Building foundation also continued. Work began to backfill around the exterior of the Unit 3 NI.

The installation of piping under the Unit 3 CR10 module continued and work continued on the first layer of the Unit 3 Containment Vessel Bottom Head

(CVBH). Rebar installation and concrete placement continued for exterior wall sections of the Unit 3 Auxiliary Building.

### **3. Units 2 and 3 Turbine Buildings and Condensers**

Work continued during the period to weld-out or bolt-up structural steel for the Unit 2 Turbine Building and to install floor grating. The installation of waterboxes and associated piping, recirculating pump skids A and B and overhead lighting was completed. Work continued on the installation and welding of piping and pipe supports for the three Unit 2 Condensers.

Construction continued on all three condenser sections for the Unit 3 Turbine Building with internal welding of the three lower condensers and fit-up and seam welding of the upper condensers. The placement of concrete under the Unit 3 Turbine Building continued. The erection of the structural steel modular sections of the Unit 3 Turbine Building, CH80 and CH82, began during the period.

### **4. Unit 2 and Unit 3 Containment Vessel (CV) Fabrication**

Welding of the Unit 2 CV Ring 1 to the CVBH continued during the period. The prepping of Unit 2 CV Ring 2 for final coating was completed during the period and by the end of the period, coating was 80% complete. Welding continued on the first of three courses of plates making up Unit 2 CV Ring 3 and on both Unit 3 CV Ring 1 and Unit 3 CV Ring 2.

Acceptance rates based on the Radiographic Testing (RT) of welds on the Units 2 and 3 CVBH and CV Rings remain above 99%.

### **5. Cooling Towers**

Work continued to install the electrical and mechanical systems and to inspect and repair welds in Cooling Towers 2A and 3A. The installation of rebar and the placement of concrete for the walls of Cooling Tower 2B continued during the period. Structural work on Cooling Tower 3B also continued during the period.

### **6. Unit 2 High-Side Switchyard**

WEC/CB&I continued installing concrete foundations for the Unit 2 Transformers in the Unit 2 High-Side Switchyard, which is located adjacent to the Unit 2 Turbine Building.

## **7. Offsite Water System (OWS)**

WEC/CB&I continued to install equipment skids in the OWS facility and work progressed on ancillary buildings.

## **8. Workforce**

Currently, approximately 3,300 WEC/CB&I personnel and subcontractor personnel are employed on site. Approximately 56% of these jobs are held by South Carolina residents.

## **B. Equipment and Fabrication**

### **1. Unit 3 Deaerator**

On September 12, 2014, the Unit 3 Deaerator was successfully received on site from South Korea, off loaded and placed in storage. The Deaerator is approximately 148 feet long and weighs in excess of 300 tons.

### **2. Steam Generators**

During the period, the welding of the Reactor Coolant Pump (RCP) casings to the Unit 2 Steam Generators was completed. The Unit 2 Steam Generators were then shipped from Doosan's facilities in South Korea and were in transit at the close of the period. The liquid penetration testing of the Unit 3 RCP casings was successfully completed during the period. Machining, cladding and welding of components of the Unit 3 Steam Generators continued at Doosan with no significant issues.

### **3. Reactor Coolant Pumps**

In response to indications related to bearing performance during loss of cooling water event tests, WEC has decided to redesign the lower thrust bearings of the RCPs. As a result, the anticipated delivery of the Unit 2 RCPs on site has been delayed from the date anticipated in Order No. 2012-884 by approximately 26 months and the Unit 3 RCPs have been delayed by 16 months from the comparable date. The additional delay is not anticipated to affect the construction schedule. This is a focus area for the project. Acceptance testing of the redesigned pumps is ongoing.

#### **4. Core Make-Up Tanks, Accumulator Tanks, Pressurizers and the Passive Residual Heat Removal Heat Exchanger (PRHR)**

During the period, the fabrication of the Unit 3 Core Make-Up Tanks was completed at the Mangiarotti Nuclear, S.p.A. (Mangiarotti) facilities in Italy. Hydrostatic testing was completed on Tank 2 and was ongoing on Tank 1. Fabrication of the Unit 3 PRHR and Pressurizer continued at the Mangiarotti facilities. The Unit 2 Pressurizer fabrication and hydrostatic testing was completed during the period.

#### **5. WEC Acquisition of Mangiarotti**

In September 2014, WEC announced that it had completed its acquisition of Mangiarotti. No negative impacts to the construction schedule for the Units are anticipated from this purchase.

#### **6. Reactor Coolant Loop (RCL) Piping**

During the previous period, WEC made the decision to scrap certain previously manufactured RCL Cold Leg piping which had been under consideration for designation to Unit 3. RCL Cold Leg piping that had been fabricated for a suspended AP1000 construction project were designated to Unit 3 to prevent any resulting delays.

#### **7. Squib Valves**

The squib valves are in the process of being redesigned to address anomalies uncovered during the initial equipment qualification testing. SCE&G continues to monitor work being done by WEC and SPX to demonstrate that the valves will perform their design basis functions. This is a focus area for the project. No schedule impact is anticipated at this time.

#### **8. Information Technology**

**Site Fiber Optic System.** The two main entry points for the fiber optic cable system serving the Units are Fiber Hut 5 and Fiber Hut 2. Fiber Hut 5 is the principal hub and was completed in the previous period. Fiber Hut 2 is the backup entry point. During the period, Fiber Hut 2 was completed and its backup power generator was installed. Work on the fiber optic cable system continues to progress as expected. Additional runs of fiber will be installed as the site development progresses.

**Configuration Management Information System (CMIS).** The CMIS is the system which will store documents and data related to the design and engineering of the Units, the Quality Assurance/Quality Control (QA/QC) records

of equipment and construction, operating programs and protocols for the Units, and related documents and data. Phase 1 of the CMIS project involves configuration of the databases and functionality to store this information and make it available for operational purposes. During the previous period, the CMIS was upgraded to the latest release of SmartPlant Foundation software. SCE&G continues to configure and test the CMIS and expects to be able to support the initial turnover of completed Unit 2 plant systems to SCE&G.

**Work Management System (WMS).** The testing of SCE&G's WMS and tag-out system is scheduled to begin in 2015. Work is progressing as expected.

**Handover and Turnover of Proprietary Information.** SCE&G and WEC/CB&I met weekly throughout the period, and will continue to do so, to develop and implement processes to organize and control handover and turnover of proprietary information necessary for inclusion in the CMIS and the WMS and for other purposes. The current phase of the turnover pilot project is expected to be completed during the fourth quarter of 2014. The deadline for completion of the turnover pilot project supports the need-dates for these systems.

## **9. Module Fabrication and Assembly**

Challenges related to fabrication of submodules continue to be a focus area of the project:

**The Revised Module Production Schedule.** As indicated in Section II.A., the fabrication and delivery of CA01 submodules is a critical path item for both Units. Accordingly, production of these modules remains a very important focus area for the project. SCE&G maintains a presence on site at CB&I-LC to monitor activities at CB&I-LC and interact with CB&I-LC leadership on a regular basis.

The CA01 module houses the steam generator components, pressurizer and refueling canal within the CV. By the end of the period, 43 of 47 CA01 submodules had been received on site. The remaining submodules are in some stage of fabrication at CB&I-LC. Assembly of the CA01 submodules that have been received on site continued throughout the period. Delays in setting the Unit 2 CA01 module would likely affect the schedule for setting the Unit 2 CA03 module and, therefore, the other construction activities that follow the setting of that module. For this reason, SCE&G is monitoring the schedule for completing and setting the Unit 2 CA01 module closely.

The CA03 module forms part of the in-containment refueling water storage tank and pressurizer cubicle wall within the CV. Fabrication of CA03 submodules continued throughout the period at SMC facilities in Lakeland, Florida.

The CA05 module forms part of the chemical and volume control system tunnel and passive core cooling system walls within the CV. Work began during the period to assemble CA05 submodules on the platen in the Module Assembly Building (MAB) for welding.

**Unit 3 Submodules.** Work continued at Oregon Iron Works and Toshiba/IHI Corporation on the principal Unit 3 CA20 and CA01 submodules respectively.

**Mechanical Modules.** During the period, the completion of fabrication of higher-priority Unit 2 mechanical modules continued on site. In addition, the assembly of the first floor Auxiliary Building mechanical modules began on site. Mechanical modules are skids or racks which hold pumps, cable trays, pipes, conduits, valves or similar equipment and are being fabricated by CB&I-LC and other contractors.

**Shield Building.** During the period, additional shipments of the panels which will comprise the steel walls of the Unit 2 Shield Building were received on site from Newport News Industries. By the end of the period, 24 Shield Building panels had been delivered to the site.

**Conclusion.** Senior management from both SCE&G and WEC/CB&I continue to monitor the fabrication and delivery process related to submodules. WEC personnel continue to provide onsite engineering support for production at CB&I-LC. SCE&G continues to maintain a permanent resident inspector at the CB&I-LC facility who provides additional monitoring. The fabrication of the submodules continues to be an important area of focus for the project.

### C. Quality Assurance and Quality Control

The NND Quality Systems Group continues to calibrate and focus its QA/QC oversight activities based on tracking of the careful study of QA/QC results to ensure that WEC/CB&I is meeting quality requirements on site, internally, and at suppliers and sub-suppliers. If effective oversight by SCE&G or WEC/CB&I is not demonstrated in any area, the Quality Systems group tracks and escalates concerns to ensure that QA/QC systems are improved to ensure effective results going forward. During the third quarter, the Quality Systems group targeted (1) site surveillances on welding, storage requirements, and concrete pours, (2) off site sub-supplier surveillances for the safety-related components of Core Make-Up Tanks, Pressurizers, Steam Generators and Casings, and (3) internal audits of WEC/CB&I Special Processes, peer audits of SCE&G Quality Systems led by Southern Nuclear Company (SNC), and an ASME Management Controls audit of WEC/CB&I. Quality Systems continues to immediately address all Safety Conscious Work Environment concerns using a full-time individual.

## **D. Licensing and Permitting**

As licensee for the Units, SCE&G is directly accountable to the NRC for contractors meeting nuclear safety-related QA/QC requirements both at the project site and at the facilities of its component manufacturers and equipment suppliers worldwide. WEC/CB&I, through the EPC Contract, is responsible to SCE&G for making sure that these requirements are met.

### **1. NRC Inspections**

During the period, the NRC issued its Second Quarter Integrated Inspection Report that included a potential Green Non-Cited Violation of 10 CFR 50 Appendix B, Criterion VII, "Control of Purchased Items and Services," for failure to provide objective evidence that the Unit 2 accumulator tanks met procurement and Inspections, Tests, Analyses and Acceptance Criteria (ITAAC) requirements by demonstrating that the accumulator tanks met volume requirements. Subsequent measurements in the field verified that the required volumes were met. A Green finding is the least significant in the NRC Construction Reactor Oversight Process. It qualitatively indicates licensee performance is acceptable and NRC Construction Reactor Oversight Process cornerstone objectives are fully met.

The NRC held an exit meeting on September 29, 2014, for the third quarter inspection period. During the meeting, one potential Green Non-Cited Violation was debriefed for failure to adequately inspect certain CA01 module welds. The NRC also conducted the following additional inspections during the period that resulted in no findings: a Mechanical/ITAAC Containment Vessel Inspection; a Corrective Action Program/ITAAC Inspection; a Civil/ITAAC Inspection; and a Quality Assurance Inspection.

### **2. LARs**

The NRC approves changes from the approved licensing basis for nuclear units through the LAR request and review process. SCE&G envisions that filings for LARs will be a normal part of the construction program for the Units going forward under the Combined Operating Licenses (COLs). Additionally, if needed, a licensee can submit a PAR associated with a LAR. Through the PAR process, the licensee can request a notification that the NRC does not object to the licensee installing and testing the proposed changed design feature, at the licensee's risk, pending the NRC's review of the associated LAR.

During the third quarter of 2014, SCE&G filed six new LARs with the NRC. The NRC has granted a total of twenty-one LARs. Eight LARs were granted during the reporting period. Sixteen LARs were pending on September 30, 2014. For ease

of reference, a report that tabulates all the LARs submitted by SCE&G to the NRC as of September 30, 2014, is attached as Appendix 5.

### **3. Inspections, Tests, Analyses and Acceptance Criteria**

In the third quarter of 2014, SCE&G submitted one ITAAC Closure Notification (ICN) to the NRC. This ICN has been verified complete by the NRC. SCE&G reported in the previous period that it intended to submit 12 ICNs to the NRC during the third quarter. These submittals have been shifted to a later date. At this time, SCE&G anticipates submitting 13 ICNs to the NRC in the fourth quarter of 2014.

### **4. First of a Kind and First Three of a Kind Testing**

The NRC requires certain specified tests to be conducted on the first of a kind and the first three of a kind AP1000 systems. Contrary to earlier indications, the NRC has determined not to allow WEC to use testing conducted on the AP1000 reactors being constructed in China in satisfaction of these requirements. This means that this testing may need to be done using the four AP1000 units being constructed in the United States by SCE&G and SNC. A LAR will be required to clarify the testing required on these units.

### **5. Major Construction Permits**

No other major construction-related permits are outstanding. Other construction-related permits are anticipated to be obtained in the ordinary course of administering the project.

## **E. Engineering**

### **1. Engineering Completion Status**

As of September 30, 2014, the Units 2 & 3 plant design packages issued for construction (IFC) are 92% complete. IFC delivery from WEC/CB&I continues to be a focus area and SCE&G is conducting monthly oversight meetings with WEC/CB&I concerning this issue.

### **2. Site Specific Design Activities**

Site specific design work is ongoing in support of site specific systems, to include the Circulating Water System (CWS), Power Distribution Center (PDC), Uninterruptable Power Supply (UPS), Raw Water System (RWS), Offsite Water System (OWS), and the Tabletop Switchyard.



## **F. Training**

1. **Plant Reference Simulator (PRS).** During the period, SCE&G completed installation of the latest version of the software (Baseline-7) which is anticipated to become the PRS software for the Units when validated by the NRC. A final readiness review of the Integrated Systems Validation (ISV) standards that were approved as part of the AP1000 design licensing took place during the period. That review determined that the ISV standards will require amendment through a LAR process to correct deficiencies in the manner in which the testing requirements were presented in the licensing documents. Alternatives that would allow SCE&G to proceed with Initial Licensed Operator (ILO) exams while a LAR is being processed are being considered. Delays in the ILO exams are possible and while this may challenge the ability to meet the training schedules, at this time these delays are not likely to impact SCE&G's readiness to support initial fuel load for Unit 2. This remains an area of focus.

2. **Initial Licensed Operator Training.** The first ILO class of 24 students completed classroom training on Baseline-7 during the period. Later in 2014, the first ILO class is anticipated to begin simulator training on Baseline-7. This training will bridge the gap between the Limited Scope Simulator (LSS) and the PRS. That class is scheduled to take the NRC written and integrated operator simulator exams in May 2015. A second ILO class of 24 students completed classroom instruction on Baseline-7 during the period. The second ILO class is scheduled to begin its initial simulator training using Baseline-7 later in 2014. This class is scheduled to take the NRC written and integrated operator simulator exams in November 2015. A third class of 18 students continued ILO training and is scheduled to take the NRC written and integrated operator simulator exams in September 2016. ILO training schedules may be reevaluated based on the review of the Revised Fully Integrated Construction Schedule discussed in Section I.C.

3. **Maintenance and Technical Staff Training.** During the previous period, the initial class of 37 maintenance and technical staff successfully completed Tier 1 training. Tier 1 covers academics, fundamentals and basic systems training. A second group of 30 maintenance and technical staff completed Tier 1 training during the current period. Also during the period, maintenance trainees completed Tier 2 common training which covers classroom and laboratory training common to mechanical, electrical and instrumentation and control personnel; health physics and chemistry technicians completed Tier 2 discipline specific training; and engineering trainees completed the orientation phase of their initial training program.

## **G. Operational Readiness**

1. **Mission Critical Hiring.** SCE&G has continued to successfully meet hiring goals for the 2014 operational readiness staffing positions that have been identified as mission critical. By the close of the period, seventy of seventy-four mission critical hires have been completed for 2014.

2. **Programs and Procedures.** During the period, SCE&G undertook a detailed evaluation of the impacts of the draft Revised Fully Integrated Construction Schedule on the operational readiness program and the allocation of resources to support the Plant Support/Programs Engineering schedule. The goal of this project is to produce a fully integrated and resource-loaded plan for the completion of all operations, maintenance and technical training programs and procedures that must be in place to support the Units' initial nuclear fuel loads. Completing this work remains a focus area due to the extent of work required and the availability of engineering resources.

3. **Collaborative Equipment Reliability Program.** The collaborative project with SNC to classify structures, systems and components and to establish maintenance strategies for the AP1000 continues. Efforts to realign resources in this area have allowed SCE&G to maintain the current schedule consistent with SNC's program schedule.

4. **Materials Procurement Engineering.** During the period, SCE&G and WEC/CB&I began an engineering study to determine the technical requirements and supply chain activities that are necessary to identify the spare parts inventory required to support the safe, reliable and efficient testing and operations of the Units. SCE&G is coordinating with SNC concerning a shared inventory of large capital spares where possible.

## **H. Change Control/Owners Cost Forecast**

1. **Change Order 18, Perch Guards.** Change Order 18, providing for the installation of perch guards on transmission structures to prevent avian interference with system reliability, was negotiated during the period and signed after the close of the period.

2. **Change Order 19, Plant Reference Simulator Hardware and Software Upgrade.** Change Order 19, related to work to upgrade the PRS hardware and software, was negotiated during the period and was signed after the close of the period. The work involves upgrades to enhance PRS displays and PRS software upgrades subsequent to Baseline-7.

**3. Change Order 20, WEC Costs Related to the Implementation of the Health Care and Education Reconciliation Act of 2010 and Prior Health Care Acts ("Health Care Act").** Change Order 20, related to WEC's increased costs of compliance with the Health Care Act, was being finalized at the close of the period.

**4. Other Change Orders.** Negotiations continued on (a) the final language for Change Order 16 (delay in receiving the combined operating licenses, Shield Building redesign, module redesign, and Unit 2 rock conditions); (b) Change Order 17 (equipment required to be installed in the OWS for the removal of bromide from raw water during treatment, the transfer of certain CB&I start-up construction support Time & Material scopes of work and associated dollars to the Target and Firm price categories, and other miscellaneous items); (c) the change order providing for cyber-security upgrades; and (d) the change order for site layout changes to meet nuclear security requirements.

## **I. Transmission**

**1. VCS1-Killian 230 kV Line.** Construction of the VCS1-Killian 230 kV Line is complete and the line is energized.

**2. VCS2-Lake Murray 230 kV Line No. 2 and Segment of the VCS2-St. George 230kV Line No. 1.** The VCS2-Lake Murray 230 kV Line No. 2 is energized. SCE&G plans to energize the segment of the VCS2-St. George 230 kV Line No. 1 that was built as a part of this project when the remaining segment of that line is built.

**3. The Remaining Segment of VCS2-St. George 230 kV Line No. 1 and the VCS2-St. George 230 kV Line No. 2.** Construction activities for these lines continued during the period. The VCS2-St. George 230 kV Line No. 2 segment between VCS2 and the Lake Murray Substation was completed during the period. Construction of both the No. 1 and No. 2 lines from the Lake Murray Substation to the point where they cross Interstate 20 was completed during the period and construction of these lines will continue towards the site of the new Saluda River Substation. Construction also continued for both the No. 1 and No. 2 lines in the Orangeburg area heading south toward the St. George Switching Station.

**4. St. George Switching Station.** The overall engineering layout of the station and the topographic surveys of the site were completed in prior periods. The official jurisdictional determination of wetlands was received from the Army Corps of Engineers and the soil borings were performed onsite for structural analysis and foundation design during the period. Preparation of the site plan and

storm water permit application continued during the period. The current scheduled completion date is June 2016.

**5. Saluda River Substation.** Construction has begun on the Saluda River Substation. The clearing and grading is complete, the substation pad is complete and structure foundation installation continued during the period. Erection of steel structures and switches and the installation of the grounding system commenced during the period. The scheduled completion date is June 2015.

### **III. Anticipated Construction Schedules**

As of September 30, 2014, all current construction milestones had been completed or were anticipated to be completed within the milestone schedule contingencies approved by the Commission. However, as reported on Appendix 1, page 15, two future equipment milestones are now outside of the contingency period. SCE&G anticipates filing additional proceedings before the Commission to update the schedules for the project when the Revised Fully Integrated Construction Schedule that is currently under review is finalized.

#### **A. Construction Schedule**

As of the close of the period, the Project Licensing and Permitting, Engineering, Procurement and Construction work remained on schedule to meet the Units' Substantial Completion Dates taking into account the schedule contingencies approved in Order 2009-104(A) and subject to the possibility that the project schedules may require updating when the Revised Fully Integrated Construction Schedule is finalized.

#### **B. BLRA Milestones**

**Appendix 1** to this quarterly report lists and updates each of the specific milestones constituting the anticipated construction schedules for the Units pursuant to S.C. Code Ann. § 58-33-270(B)(1) and Order No. 2012-884.

### **IV. Schedules of the Capital Costs Incurred Including Updates to the Information Required by S.C. Code Ann. § 58-33-270(B) (6) (the Inflation Indices)**

The Capital Costs section of this report (Section IV.A.) provides an update of the cumulative capital costs incurred and forecasted to be incurred in completing the project. These costs are compared to the cumulative capital cost targets approved by the Commission in Order No. 2012-884. The approved capital cost targets have been adjusted to reflect the currently reported historical escalation rates. There has not been any use by the Company of the capital cost timing contingencies that were approved by the Commission in Order No. 2009-104(A). The Inflation Indices section (Section IV.B.) of this report provides updated information on inflation indices and the changes in them.

## A. Capital Costs

**Appendix 2** shows the Cumulative Project Cash Flow target as approved in Order No. 2012-884 and as updated for escalation and other Commission-approved adjustments under the heading “**Per Order 2012-884 Adjusted.**”

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the Company’s current forecast of cost and construction schedules under the heading “**Actual through September 2014 plus Projected.**”

As shown on **Appendix 2**, the projected expenditure for the project for the 12 months ended December 31, 2014, is approximately \$709 million. As shown on **Appendix 2**, line 39, the cumulative amount projected to be spent on the project as of December 31, 2014, is approximately \$3.020 billion. As shown on **Appendix 2**, line 18, the Cumulative Project Cash Flow target approved by the Commission for year-end 2014 adjusted for current escalation and WEC/CB&I billing differences is approximately \$3.819 billion. As a result, the cumulative cash flow at year-end 2014 is projected to be approximately \$799 million less than the target.

For comparison purposes, **Appendix 3** sets out the cash flow schedule for the project as it was approved in Order No. 2012-884. **Appendix 3** does not include any adjustments to the cash flow schedule for changes in inflation indices or adjustments in capital cost schedules made by the Company. The AFUDC forecast presented on **Appendix 3** is the AFUDC forecast that was current at the time of Order No. 2012-884.

## B. Inflation Indices

**Appendix 4** shows the updated inflation indices approved in Order No. 2009-104(A). Included is a history of the annual Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index for the past 10 years. The changes in these indices and the escalation-related effects of cost rescheduling resulted in a decrease in the projected cost of the Units in future dollars from approximately \$6.3 billion as forecast in Order No. 2009-104(A) to a forecast of approximately \$5.8 billion using current inflation data.

## V. Updated Schedule of Anticipated Capital Costs

The updated schedule of anticipated capital costs for Units 2 & 3 is reflected in **Appendix 2**.

## VI. Conclusion

The Units are currently anticipated to be completed at a cost of approximately \$4.5 billion in 2007 dollars. The Company maintains a staff that monitors the work of its

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contractors and continues to monitor closely areas of concern related to either the cost or schedule for the project. The Company will continue to update the Commission and the ORS of progress and concerns as the project proceeds.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
AFUDC	Allowance for Funds Used During Construction.
AP1000	The WEC designed Advanced Pressurized water nuclear reactor of approximately 1000 megawatts generating capacity.
APOG	A group of utilities who have submitted applications for AP1000 COLs.
BLRA	The Base Load Review Act, S.C. Code Ann. § 58-33-210 et seq. (Supp. 2009).
CA	The designation for specific pre-fabricated structural modules that form part of the reactor building or auxiliary building, such as Module CA20.
CAP	Corrective Action Program.
CAR	A Corrective Action Report related to design, engineering or construction of the Units, or related processes, that must be corrected.
CB&I	Chicago Bridge & Iron, a sub-contractor on the project which, upon acquisition of the Shaw Group, became a member of the Consortium and a prime contractor on the project.
CB&I-LC	CB&I Lake Charles - the module fabrication unit formerly known as Shaw Modular Solutions or SMS and located in Lake Charles, Louisiana.
CB&I Services	A subsidiary of CB&I that is fabricating the containment vessels onsite under contract with Westinghouse.
CES	Carolina Energy Solutions, a subcontractor located in Rock Hill, South Carolina.
CMIS	Configuration Management Information System.
COLs	Combined Operating Licenses for construction and operation of a nuclear unit issued by the NRC.
COLA	A Combined Operating License Application.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
Commission	The Public Service Commission of South Carolina.
Consortium	The joint venture between WEC and CB&I to construct the Units under the terms of the EPC Contract.
CR	A Condition Report communicating and memorializing concerns with the design, engineering or construction of the Units, or related processes, which in some cases can become the basis for a Corrective Action Report.
CV	The Containment Vessel which provides containment for the reactor vessel and associated equipment.
CVBH	The Containment Vessel Bottom Head that forms the bottom of the Containment Vessel.
CWIP	Construction Work in Progress.
CWP	Circulating Water Pipe.
CWS	The Circulating Water System –the system that will transport waste heat from the turbines to the cooling towers.
Cyber Security	Technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access.
DCD	Design Control Document which is approved by the Nuclear Regulatory Commission and sets forth the approved design of a nuclear reactor.
Departures	Departures are minor deviations from the approved Design Control Document included in the licensing basis for the Units that do not rise to the level requiring a LAR.
EMD	Electro-Mechanical Division of Curtiss-Wright Corp., the sub-contractor for the Reactor Coolant Pumps.
EPA	The United States Environmental Protection Agency.



**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
EPC Contract	The Engineering, Procurement and Construction Agreement for construction of the Units entered into by SCE&G and WEC/CB&I.
ERB	The Emergency Response Building which provides office space and housing for the emergency response personnel and equipment for all three units.
Exit Debriefing	A meeting held between the NRC and the licensee at the conclusion of an NRC inspection to discuss the results of the inspection.
FERC	The Federal Energy Regulatory Commission.
Fixed/Firm	Prices under the EPC Contract which are either fixed or are firm but subject to defined escalation rates.
GDP	Gross Domestic Product.
HFE/ISV	Human Factors Engineering/Integrated Systems Validation –part of the development of a training simulator for the Units.
HL or Hot Leg	That part of the Reactor Cooling Loop that transports steam to the steam generators.
HLD	Heavy Lift Derrick - the derrick that was erected on site to move large modules and equipment.
IBF	Subcontractor of Tioga that manufactures the Reactor Coolant Loop piping.
ICN	ITAAC Closure Notification – the letter from the licensee to notify the NRC that an ITAAC is complete in accordance with 10 CFR 52.99(c)(1).
IFC	Issued for Construction – engineering drawings that include information necessary for construction of specific structures, systems and components.
ILO	Initial Licensed Operator.
INPO	Institute of Nuclear Power Operations.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
IPS	Integrated Project Schedule for licensing and construction of the Units.
ISV	Integrated Systems Validation.
ITAAC	Inspections, Tests, Analyses, and Acceptance Criteria which are the inspections, tests, analyses and acceptance criteria that the NRC has determined to be necessary and sufficient to demonstrate that a nuclear unit has been constructed and will operate in conformity with the COLs, the Atomic Energy Act of 1954, as amended, and the NRC's regulations.
LAR	License Amendment Request – A formal request made by VCSNS to amend the combined operating license, its appendices, or its associated bases.
LNTF	Limited Notice to Proceed authorizing a vendor to commence specific work.
LSS	Limited Scope Simulator –a training simulator with limited functionality that can be used for the initial stages of operator training.
MAB	Module Assembly Building - a building on site where large modules will be constructed and equipment will be prepared for installation in a space that is protected from the elements.
Mangiarotti	Mangiarotti Nuclear, S.p.A.
NEI	Nuclear Energy Institute.
NI	Nuclear Island, comprising the steel containment vessel, the reactor building, and the auxiliary building.
NLC	Nuclear Learning Center - a training facility operated by SCE&G at the Jenkinsville site.
NLO	Non-Licensed Operator.
NND	The New Nuclear Deployment Team within SCE&G.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
NNI	Newport News Industries - a module fabrication subcontractor to WEC/CB&I.
NPDES	National Pollutant Discharge Elimination System.
NRC	The United States Nuclear Regulatory Commission.
ORS	South Carolina Office of Regulatory Staff.
OWS	Off Site Water System – the system that withdraws water from Monticello Reservoir and provides potable and filtered water for the Units.
PAR	Preliminary Amendment Request - A formal request made by VCSNS which allows VCSNS to proceed at its own risk with work consistent with an amendment request contained in an LAR prior to approval.
PDC	Power Distribution Center - prefabricated, modular enclosures housing electrical equipment such as switchgear, motor control center equipment and other auxiliary equipment.
Pike	Pike Energy Solutions, a contractor for transmission and switchyard related work.
PRA	Probabilistic Risk Assessment.
PRHR	The Passive Residual Heat Removal Heat Exchanger unit –a heat exchanger unit that is part of the passive safety system which provides cooling to the AP1000 reactor during emergency situations.
PRS	Plant Reference Simulator – a training simulator with full functionality that can be used in all stages of operator training.
PWS	The Potable Water System - which provides potable water to the site.
QA	Quality Assurance – The planned and systematic activities implemented in a quality system so that the quality requirements for a product or service will be fulfilled.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
QA/QC	Quality Assurance/Quality Control.
QC	Quality Control – The observation techniques and activities used to fulfill requirements for quality.
RAI	Requests for Additional Information issued by the NRC staff to license applicants.
RCA	Root Cause Analysis – identification and evaluation of the reason for non-conformance, an undesirable condition, or a problem which (when solved) restores the status quo.
RCL	The Reactor Coolant Loop – the piping and related equipment that transports heat from the reactor to the steam generator.
RCP	The Reactor Cooling Pump which forms part of the Reactor Coolant System.
RCS	The Reactor Coolant System - the complete system for transferring and transporting heat from the reactor to the steam generator.
RFI	Requests for Information issued by the NRC staff to licensees.
ROW	Right-of-way.
RT	Radiographic Testing - a nondestructive testing method of inspecting materials for hidden flaws by using the ability of short wavelength electromagnetic radiation (high energy photons) to penetrate various materials.
RV	Reactor Vessel.
RWS	Raw Water System – the system for withdrawing and transporting raw water from the Monticello Reservoir.
SAT	Site Acceptance Testing.
SCDHEC	The South Carolina Department of Health and Environmental Control.
SCDNR	The South Carolina Department of Natural Resources.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
SCE&G or The Company	South Carolina Electric & Gas Company.
SCPSC	The Public Service Commission of South Carolina.
Shaw	The Shaw Group.
SMS	Shaw Modular Solutions, LLC.
SNC	Southern Nuclear Company – a subsidiary of Southern Company and licensed operator of the Vogtle Nuclear Units and two other nuclear plants.
SRO	Senior Reactor Operator.
SROC	Senior Reactor Operator Certification.
Target	Costs under the EPC Contract where targets have been established but where SCE&G pays actual costs as incurred.
TEi	Thermal Engineering International – a subsidiary of Babcock Power which manufactures moisture separator reheaters and other power plant equipment.
Units	V. C. Summer Nuclear Station Units 2 & 3.
Update Docket	A proceeding under the BLRA seeking Commission approval of updated cost and construction schedules for the Units.
UPS	Uninterruptable Power Supply.
URI	Unresolved Items – A term used by the NRC during inspections for items that require further action.
USACOE	The United States Army Corps of Engineers.

**ATTACHMENT 1****GLOSSARY OF ACRONYMS OR DEFINED TERMS**

Acronym or Defined Term	Reference
VCSNS or VCSN	V. C. Summer Nuclear Station.
WEC	Westinghouse Electric Company, LLC.
WEC/CB&I	The consortium formed by Westinghouse Electric Company, LLC and CB&I.
WMS	Work Management System.
WTP	The off-site Water Treatment Plant which will take water from Lake Monticello and treat it to potable water standards.
WWS	The Waste Water System – the system for collection, treatment and disposal of domestic waste water generated on site.
YFS	The Yard Fire System – the system that provides fire detection and protection outside of the plant.
ZBS	The Offsite Power System –the system which provides electrical power to the site.

**APPENDIX 1****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2014**

**Appendix 1** lists and updates each of the milestones which the Commission adopted as the Approved Construction Schedule for the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(1) in Order No. 2012-884. **Appendix 1** provides columns with the following information:

1. Milestone tracking ID number.
2. The description of the milestone as updated in Order No. 2012-884.
3. The BLRA milestone date as approved by the Commission in Order No. 2012-884.
4. The current milestone date.
5. For each completed milestone, the date by which it was completed. For milestones completed prior to the current reporting quarter, the milestone entry is shaded in gray. For milestones completed during the current reporting quarter, the milestone entry is shaded in green.
6. Information showing the number of months, if any, by which a milestone has been shifted. For milestones with planned completion dates that vary in days instead of months, the milestone entry is shaded in yellow.
7. Information as to whether any milestone has been shifted outside of the +18/-24 Month Contingency approved by the Commission.
8. Notes.

On the final page of the document, there is a chart summarizing milestone completion and movement comparing the current milestone date to the milestone date approved in Order No. 2012-884. This movement is shown for only the milestones that have not been completed.



### Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
1	Approve Engineering Procurement and Construction Agreement	Complete		5/23/2008		No	
2	Issue POs to nuclear component fabricators for Units 2 & 3 Containment Vessels	Complete		12/3/2008		No	
3	Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - First Payment - Unit 2	Complete		8/18/2008		No	
4	Contractor Issue PO to Accumulator Tank Fabricator - Unit 2	Complete		7/31/2008		No	
5	Contractor Issue PO to Core Makeup Tank Fabricator - Units 2 & 3	Complete		9/30/2008		No	
6	Contractor Issue PO to Squib Valve Fabricator - Units 2 & 3	Complete		3/31/2009		No	
7	Contractor Issue PO to Steam Generator Fabricator - Units 2 & 3	Complete		5/29/2008		No	
8	Contractor Issue Long Lead Material PO to Reactor Coolant Pump Fabricator - Units 2 & 3	Complete		6/30/2008		No	
9	Contractor Issue PO to Pressurizer Fabricator - Units 2 & 3	Complete		8/18/2008		No	
10	Contractor Issue PO to Reactor Coolant Loop Pipe Fabricator - First Payment - Units 2 & 3	Complete		6/20/2008		No	
11	Reactor Vessel Internals - Issue Long Lead Material PO to Fabricator - Units 2 & 3	Complete		11/21/2008		No	
12	Contractor Issue Long Lead Material PO to Reactor Vessel Fabricator - Units 2 & 3	Complete		5/29/2008		No	
13	Contractor Issue PO to Integrated Head Package Fabricator - Units 2 & 3	Complete		7/31/2009		No	
14	Control Rod Drive Mechanism Issue PO for Long Lead Material to Fabricator - Units 2 & 3 - first payment	Complete		6/21/2008		No	

Legend  - Completed  - Completed this Quarter  - Movement in Days Only



# Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
15	Issue POs to nuclear component fabricators for Nuclear Island structural CA20 Modules	Complete		8/28/2009		No	
16	Start Site Specific and balance of plant detailed design	Complete		9/11/2007		No	
17	Instrumentation & Control Simulator - Contractor Place Notice to Proceed - Units 2 & 3	Complete		10/31/2008		No	
18	Steam Generator - Issue Final PO to Fabricator for Units 2 & 3	Complete		6/30/2008		No	
19	Reactor Vessel Internals - Contractor Issue PO for Long Lead Material (Heavy Plate and Heavy Forgings) to Fabricator - Units 2 & 3	Complete		1/29/2010		No	
20	Contractor Issue Final PO to Reactor Vessel Fabricator - Units 2 & 3	Complete		9/30/2008		No	
21	Variable Frequency Drive Fabricator Issue Transformer PO - Units 2 & 3	Complete		4/30/2009		No	
22	Start clearing, grubbing and grading	Complete		1/26/2009		No	
23	Core Makeup Tank Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/31/2008		No	
24	Accumulator Tank Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/31/2008		No	
25	Pressurizer Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/31/2008		No	
26	Reactor Coolant Loop Pipe - Contractor Issue PO to Fabricator - Second Payment - Units 2 & 3	Complete		4/30/2009		No	
27	Integrated Head Package - Issue PO to Fabricator - Units 2 and 3 - second payment	Complete		7/31/2009		No	
28	Control Rod Drive Mechanisms - Contractor Issue PO for Long Lead Material to Fabricator - Units 2 & 3	Complete		6/30/2008		No	

Legend  - Completed  - Completed this Quarter  - Movement in Days Only



### Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
29	Contractor Issue PO to Passive Residual Heat Removal Heat Exchanger Fabricator - Second Payment - Units 2 & 3	Complete		10/31/2008		No	
30	Start Parr Road intersection work	Complete		2/13/2009		No	
31	Reactor Coolant Pump - Issue Final PO to Fabricator - Units 2 & 3	Complete		6/30/2008		No	
32	Integrated Heat Packages Fabricator Issue Long Lead Material PO - Units 2 & 3	Complete		10/1/2009		No	
33	Design Finalization Payment 3	Complete		1/30/2009		No	
34	Start site development	Complete		6/23/2008		No	
35	Contractor Issue PO to Turbine Generator Fabricator - Units 2 & 3	Complete		2/19/2009		No	
36	Contractor Issue PO to Main Transformers Fabricator - Units 2 & 3	Complete		9/25/2009		No	
37	Core Makeup Tank Fabricator Notice to Contractor Receipt of Long Lead Material - Units 2 & 3	Complete		12/30/2010		No	
38	Design Finalization Payment 4	Complete		4/30/2009		No	
39	Turbine Generator Fabricator Issue PO for Condenser Material - Unit 2	Complete		8/28/2009		No	
40	Reactor Coolant Pump Fabricator Issue Long Lead Material Lot 2 - Units 2 & 3	Complete		4/30/2009		No	
41	Passive Residual Heat Removal Heat Exchanger Fabricator Receipt of Long Lead Material - Units 2 & 3	Complete		5/27/2010		No	
42	Design Finalization Payment 5	Complete		7/31/2009		No	

Legend  = Completed  = Completed this Quarter  = Movement in Days Only



Appendix 1  
VC Summer Units 2 and 3

14-3Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
43	Start erection of construction buildings, to include craft facilities for personnel, tools, equipment; first aid facilities; field offices for site management and support personnel; temporary warehouses; and construction hiring office	Complete		12/18/2009		No	
44	Reactor Vessel Fabricator Notice to Contractor of Receipt of Flange Nozzle Shell Forging - Unit 2	Complete		8/28/2009		No	
45	Design Finalization Payment 6	Complete		10/7/2009		No	
46	Instrumentation and Control Simulator - Contractor Issue PO to Subcontractor for Radiation Monitor System - Units 2 & 3	Complete		12/17/2009		No	
47	Reactor Vessel Internals - Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2	Complete		7/29/2011		No	
48	Turbine Generator Fabricator Issue PO for Moisture Separator Reheater/Feedwater Heater Material - Unit 2	Complete		4/30/2010		No	
49	Reactor Coolant Loop Pipe Fabricator Acceptance of Raw Material - Unit 2	Complete		2/18/2010		No	
50	Reactor Vessel Internals - Fabricator Start Weld Neutron Shield Spacer Pads to Assembly - Unit 2	Complete		8/28/2012		No	
51	Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 2	Complete		6/30/2009		No	
52	Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 2	Complete		12/23/2010		No	
53	Start excavation and foundation work for the standard plant for Unit 2	Complete		3/15/2010		No	
54	Steam Generator Fabricator Notice to Contractor of Receipt of 2nd Steam Generator Tubesheet Forging - Unit 2	Complete		4/30/2010		No	

Legend:  - Completed  - Movement in Day Only



**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
55	Reactor Vessel Fabricator Notice to Contractor of Outlet Nozzle Welding to Flange Nozzle Shell Completion - Unit 2	Complete		12/30/2010		No	
56	Turbine Generator Fabricator Notice to Contractor Condenser Fabrication Started - Unit 2	Complete		5/17/2010		No	
57	Complete preparations for receiving the first module on site for Unit 2	Complete		1/22/2010		No	
58	Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Transition Cone Forging - Unit 2	Complete		4/21/2010		No	
59	Reactor Coolant Pump Fabricator Notice to Contractor of Manufacturing of Casing Completion - Unit 2	Complete		11/16/2010		No	
60	Reactor Coolant Loop Pipe Fabricator Notice to Contractor of Machining, Heat Treating & Non-Destructive Testing Completion - Unit 2	Complete		3/20/2012		No	
61	Core Makeup Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 2	Complete		11/26/2012		No	
62	Polar Crane Fabricator Issue PO for Main Hoist Drum and Wire Rope - Units 2 & 3	Complete		2/1/2011		No	
63	Control Rod Drive Mechanisms - Fabricator to Start Procurement of Long Lead Material - Unit 3	Complete		6/14/2011		No	
64	Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 2	Complete		3/26/2012		No	
65	Start placement of mud mat for Unit 2	Complete		7/20/2012		No	
66	Steam Generator Fabricator Notice to Contractor of Receipt of 1st Steam Generator Tubing - Unit 2	Complete		9/28/2010		No	

Legend  - Completed  - Completed this Quarter  - Movement in Days Only



Appendix 1  
VC Summer Units 2 and 3

14-3Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
67	Pressurizer Fabricator Notice to Contractor of Welding of Upper and Intermediate Shells Completion - Unit 2	Complete		10/28/2011		No	
68	Reactor Vessel Fabricator Notice to Contractor of Closure Head Cladding Completion - Unit 3	Complete		6/28/2012		No	
69	Begin Unit 2 first nuclear concrete placement	Complete		3/9/2013		No	
70	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 2	Complete		12/1/2011		No	
71	Fabricator Start Fit and Welding of Core Shroud Assembly - Unit 2	Complete		7/29/2011		No	
72	Steam Generator Fabricator Notice to Contractor of Completion of 1st Steam Generator Tubing Installation - Unit 2	Complete		1/27/2012		No	
73	Reactor Coolant Loop Pipe - Shipment of Equipment to Site - Unit 2	Complete		12/19/2013		No	
74	Control Rod Drive Mechanism - Ship Remainder of Equipment (Latch Assembly & Rod Travel Housing) to Head Supplier - Unit 2	Complete		7/16/2012		No	
75	Pressurizer Fabricator Notice to Contractor of Welding of Lower Shell to Bottom Head Completion - Unit 2	Complete		12/22/2011		No	
76	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 2	Complete		5/4/2012		No	
77	Design Finalization Payment 14	Complete		10/31/2011		No	

Legend  = Completed  = Completed this Quarter - Movement in Days Only



**Appendix 1**  
**VC Summer Units 2 and 3**

14-3Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
78	Set module CA04 for Unit 2	Complete		5/3/2014		No	
79	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Final Post Weld Heat Treatment - Unit 2	Complete		5/24/2011		No	
80	Passive Residual Heat Removal Heat Exchanger Fabricator Notice to Contractor of Completion of Tubing - Unit 2	Complete		5/29/2012		No	
81	Polar Crane Fabricator Notice to Contractor of Girder Fabrication Completion - Unit 2	Complete		10/23/2012		No	
82	Turbine Generator Fabricator Notice to Contractor Condenser Ready to Ship - Unit 3	Complete		8/26/2013		No	
83	Set Containment Vessel ring #1 for Unit 2	Complete		6/3/2014		No	
84	Reactor Coolant Pump Fabricator Delivery of Casings to Port of Export - Unit 2	Complete		7/6/2013		No	
85	Reactor Coolant Pump Fabricator Notice to Contractor of Stator Core Completion - Unit 3	Complete		7/18/2013		No	
86	Reactor Vessel Fabricator Notice to Contractor of Receipt of Core Shell Forging - Unit 3	Complete		3/29/2012		No	
87	Contractor Notified that Pressurizer Fabricator Performed Cladding on Bottom Head - Unit 3	Complete		11/9/2011		No	

Legend

 = Completed  
 = Completed this Quarter  
 = Movement in Days Only



14-3Q

**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
88	Set Nuclear Island structural module CA03 for Unit 2	6/26/2013	10/22/2014		+16 Month(s)	No	Definitive information to set new milestone date not yet received. Milestone date has not exceeded +18 months during this reporting period.
89	Squib Valve Fabricator Notice to Contractor of Completion of Assembly and Test for Squib Valve Hardware - Unit 2	Complete		5/10/2012		No	
90	Accumulator Tank Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	Complete		9/16/2013		No	
91	Polar Crane Fabricator Notice to Contractor of Electric Panel Assembly Completion - Unit 2	Complete		3/6/2013		No	
92	Start containment large bore pipe supports for Unit 2	6/28/2013	9/30/2014		+15 Month(s)	No	Definitive information to set new milestone date not yet received. Milestone date has not exceeded +18 months during this reporting period.
93	Integrated Head Package - Shipment of Equipment to Site - Unit 2	Complete		5/9/2014		No	
94	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 2	Complete		12/17/2013		No	
95	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Steam Generator Tubing Installation - Unit 3	Complete		2/7/2014		No	

Legend  = Completed  = Completed this Quarter  = Milestones in Days Only

South Carolina Electric &amp; Gas Company

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**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
96	Steam Generator Fabricator Notice to Contractor of Satisfactory Completion of 1st Steam Generator Hydrotest - Unit 2	Complete		1/14/2013		No	
97	Start concrete fill of Nuclear Island structural modules CA01 and CA02 for Unit 2	4/3/2014	5/24/2015		+13 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
98	Passive Residual Heat Removal Heat Exchanger - Delivery of Equipment to Port of Entry - Unit 2	Complete		4/25/2014		No	
99	Refueling Machine Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 2	11/30/2013	1/30/2015		+14 Month(s)	No	Due to schedule refinement and review.
100	Deliver Reactor Vessel Internals to Port of Export - Unit 2	1/31/2014	4/30/2015		+15 Month(s)	No	Due to schedule refinement and review.
101	Set Unit 2 Containment Vessel #3	4/24/2014	8/31/2015		+16 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
102	Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 2	7/31/2013	12/31/2014		+17 Month(s)	No	Due to schedule refinement and review.
103	Turbine Generator Fabricator Notice to Contractor Turbine Generator Ready to Ship - Unit 2	Complete		5/28/2013		No	
104	Pressurizer Fabricator Notice to Contractor of Satisfactory Completion of Hydrotest - Unit 3	3/31/2014	12/30/2014		+9 Month(s)	No	Due to schedule refinement and review.
105	Polar Crane - Shipment of Equipment to Site - Unit 2	1/31/2014	7/30/2015		+18 Month(s)	No	Due to schedule refinement and review.

**Legend**

 - Completed  
 - Completed this Quarter  
 - Movement in Days Only



**Appendix 1**  
**VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
106	Receive Unit 2 Reactor Vessel on site from fabricator	Complete		7/31/2013		No	
107	Set Unit 2 Reactor Vessel	6/23/2014	4/10/2015		+10 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
108	Steam Generator Fabricator Notice to Contractor of Completion of 2nd Channel Head to Tubesheet Assembly Welding - Unit 3	12/31/2013	1/30/2015		+13 Month(s)	No	Due to schedule refinement and review.
109	Reactor Coolant Pump Fabricator Notice to Contractor of Final Stator Assembly Completion - Unit 3	8/31/2014	1/30/2015		+5 Month(s)	No	Due to design changes.
110	Reactor Coolant Pump - Shipment of Equipment to Site (2 Reactor Coolant Pumps) - Unit 2	10/31/2013	12/30/2015		+26 Month(s)	Yes	Due to design changes.
111	Place first nuclear concrete for Unit 3	Complete		11/2/2013		No	
112	Set Unit 2 Steam Generator	10/23/2014	7/31/2015		+9 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
113	Main Transformers Ready to Ship - Unit 2	Complete		7/31/2013		No	
114	Complete Unit 3 Steam Generator Hydrotest at fabricator	2/28/2014	4/30/2015		+14 Month(s)	No	Due to schedule refinement and review.
115	Set Unit 2 Containment Vessel Bottom Head on basemat legs	Complete		5/22/2013		No	

Legend

- Completed

- Completed this Quarter

- Movement in Days Only

Appendix 1  
VC Summer Units 2 and 3

14-3Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
116	Set Unit 2 Pressurizer Vessel	5/16/2014	6/1/2015		+13 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
117	Reactor Coolant Pump Fabricator Notice to Contractor of Satisfactory Completion of Factory Acceptance Test - Unit 3	2/28/2015	9/14/2016		+19 Month(s)	Yes	Due to design changes.
118	Deliver Reactor Vessel Internals to Port of Export - Unit 3	6/30/2015	6/30/2016		+12 Month(s)	No	Due to schedule refinement and review.
119	Main Transformers Fabricator Issue PO for Material - Unit 3	2/28/2015	2/2/2015			No	Due to schedule refinement and review.
120	Complete welding of Unit 2 Passive Residual Heat Removal System piping	2/5/2015	10/12/2015		+8 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
121	Steam Generator - Contractor Acceptance of Equipment at Port of Entry - Unit 3	4/30/2015	11/30/2015		+7 Month(s)	No	Due to delay associated with fabrication activities.
122	Refueling Machine - Shipment of Equipment to Site - Unit 3	2/28/2015	11/6/2015		+9 Month(s)	No	Due to schedule refinement and review.
123	Set Unit 2 Polar Crane	1/9/2015	10/28/2015		+9 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
124	Reactor Coolant Pumps - Shipment of Equipment to Site - Unit 3	6/30/2015	10/19/2016		+16 Month(s)	No	Due to design changes.
125	Main Transformers Ready to Ship - Unit 3	7/31/2015	5/31/2015		-2 Month(s)	No	Schedule ahead of plan.

Legend  = Completed  = Completed this Quarter  = Movement in Days Only

South Carolina Electric &amp; Gas Company

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Appendix 1  
VC Summer Units 2 and 3

14-3Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
126	Spent Fuel Storage Rack - Shipment of Last Rack Module - Unit 3	7/31/2014	12/30/2014		+5 Month(s)	No	Due to schedule refinement and review.
127	Start electrical cable pulling in Unit 2 Auxiliary Building	8/14/2013	11/14/2014		+15 Month(s)	No	Due to delays associated with engineering and licensing approvals and delay of FNC.
128	Complete Unit 2 Reactor Coolant System cold hydro	1/22/2016	10/16/2016		+9 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
129	Activate class 1E DC power in Unit 2 Auxiliary Building	3/15/2015	2/6/2016		+11 Month(s)	No	Due to delays associated with engineering and licensing approvals and delay of FNC.
130	Complete Unit 2 hot functional test	5/3/2016	2/15/2017		+9 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module. Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
131	Install Unit 3 ring 3 for containment vessel	8/25/2015	6/9/2016		+10 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
132	Load Unit 2 nuclear fuel	9/15/2016	7/25/2017		+10 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.

Legend



- Completed



- Completed this Quarter



- Movement in Days Only



Appendix 1  
VC Summer Units 2 and 3

14-3Q

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
133	Unit 2 Substantial Completion	3/15/2017	12/15/2017		+9 Month(s)	No	Due to delays associated with fabrication, assembly and setting of the CA01 module.
134	Set Unit 3 Reactor Vessel	10/22/2015	1/26/2016		+3 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
135	Set Unit 3 Steam Generator #2	2/25/2016	4/2/2016		+2 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
136	Set Unit 3 Pressurizer Vessel	7/16/2015	1/26/2016		+6 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
137	Complete welding of Unit 3 Passive Residual Heat Removal System piping	6/16/2016	6/15/2016			No	Due to schedule refinement and review.
138	Set Unit 3 polar crane	5/9/2016	10/10/2016		+5 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.

Legend



- Completed



- Completed this Quarter



- Movement in Days Only

14-3Q

### Appendix 1 VC Summer Units 2 and 3

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
139	Start Unit 3 Shield Building roof slab rebar placement	5/26/2016	10/21/2016		+5 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
140	Start Unit 3 Auxiliary Building electrical cable pulling	11/7/2014	9/23/2015		+10 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
141	Activate Unit 3 Auxiliary Building class 1E DC power	5/15/2016	12/5/2016		+7 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
142	Complete Unit 3 Reactor Coolant System cold hydro	3/22/2017	8/30/2017		+5 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
143	Complete Unit 3 hot functional test	7/3/2017	1/4/2018		+6 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
144	Complete Unit 3 nuclear fuel load	11/15/2017	6/20/2018		+7 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.

Legend



- Completed



- Completed this Quarter



- Movement in Days Only

**Appendix 1  
VC Summer Units 2 and 3**

Tracking ID	Order No. 2012-884 Description	Order No. 2012-884 Date	14-3Q Targeted Milestone Completion Date	Actual Completion Date	Delta Months from Order No. 2012-884 Date	Outside +18/-24 Months Contingency?	Notes
145	Begin Unit 3 full power operation	4/8/2018	11/25/2018		+7 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
146	Unit 3 Substantial Completion	5/15/2018	12/15/2018		+7 Month(s)	No	Due to rescheduling of Unit 3 work impacted by delays associated with fabrication, assembly and setting of the CA01 module.
<p align="center"><b>SUMMARY</b></p> <p><b>Total Milestones Completed      100      out of      146 =      68%</b></p> <p align="center">Milestone Movement - Order No. 2012-884 vs. 14-3Q:</p> <p>    a) Forward Movement      43      out of      146 =      29%</p> <p>    b) Backward Movement      1      out of      146 =      1%</p> <p><b>Milestones Within +12 to +18 Month range      14      out of      146 =      9%</b></p> <p><b>Milestones over the +18 Month range      2      out of      146 =      1%</b></p>							

Legend       = Completed       = Completed this Quarter       = Movement in Days Only

**APPENDIX 2****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2014**

**Appendix 2** is an updated and expanded version of the information contained in the capital cost schedule approved by the Commission in Order No. 2012-884.

**Appendix 2** shows:

1. The actual expenditures on the project by plant cost category through the current period.
2. The changes in capital costs reflecting the Company's current forecast of expenditures on the project for each future period by plant cost category. In updating its cost projections the Company has used the current construction schedule for the project and the Commission-approved inflation indices as set forth in **Appendix 4** to this report.
3. The cumulative CWIP for the project and the balance of CWIP that is not yet reflected in revised rates.
4. The current rate for calculating AFUDC computed as required under applicable FERC regulations.

The Cumulative Project Cash Flow target as approved in Order No. 2012-884 and as updated for escalation and other Commission-approved adjustments is found under the heading **"Per Order 2012-884 Adjusted."** The adjustments reflect:

1. Changes in inflation indices.
2. Budget Carry-Forward Adjustments used, where appropriate to track the effect of lower-than-expected cumulative costs on the future cumulative cash flow of the project.

**Appendix 2** also shows the cumulative cash flow for the project based on actual expenditures to date and the current construction schedule and forecast of year-by-year costs going forward. This information is found under the heading **"Actual through September 2014 plus Projected."**

**Appendix 2**  
**RESTATED and UPDATED CONSTRUCTION EXPENDITURES**  
(Thousands of \$)

PUBLIC VERSION

**V.C. Summer Units 2 and 3 - Summary of SCE&G Capital Cost Components**

	<b>Total</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
<b>Per Order 2012-884 Adjusted</b>													
Annual Project Cash Flow(per order)	5,516,849	21,723	100,905	340,003	398,551	349,081	713,307	950,179	1,007,569	831,281	521,351	201,408	81,510
Capital Cost Rescheduling Contingency	-	-	-	-	-	-	-	-	-	-	-	-	-
Budget Carry-Forward Adjustment	-	-	-	-	-	-	-	-	-	-	-	-	-
Net	5,516,849	21,723	100,905	340,003	398,551	349,081	713,307	950,179	1,007,569	831,281	521,351	201,408	81,510
Adjusted for Change in Escalation	5,393,835	21,723	100,905	340,003	398,551	349,081	704,909	935,238	968,168	791,138	505,192	198,519	80,429
Cumulative Project Cash Flow(Target)		21,723	122,829	482,832	881,183	1,210,244	1,915,153	2,850,390	3,818,557	4,609,696	5,114,888	5,313,406	5,393,835
<b>Actual through September 2014* plus Projected</b>													
<b>Total</b>		<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Actual 2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Projected 2016</b>	<b>2017</b>	<b>2018</b>
Plant Cost Categories													
Fixed with No Adjustment	329,512	-	26	724	927	11,964	51,641	56,593	54,831	66,441	65,311	21,254	-
Firm with Fixed Adjustment A	4,548,405	21,723	97,386	319,073	374,810	314,977	488,425	448,947	577,075	877,509	552,316	328,917	147,245
Firm with Fixed Adjustment B													
Firm with Indexed Adjustment	976,125	-	3,519	20,930	23,741	34,084	74,481	88,622	132,394	232,327	183,068	126,280	56,679
Actual Craft Wages													
Non-Labor Costs													
Time & Materials													
Owners Costs													
Transmission Costs													
Total Base Project Costs(2007 \$)	5,524,530	21,723	100,905	340,003	398,551	349,061	562,906	537,569	709,469	1,109,836	735,385	455,196	203,924
Total Project Escalation													
<b>Total Revised Project Cash Flow</b>													
Cumulative Project Cash Flow(Revised)		21,723	122,829	482,832	881,183	1,210,244	1,773,150	2,310,719	3,020,188	4,130,025	4,865,410	5,320,606	5,524,530
AFUDC(Capitalized Interest)	272,377	845	3,497	10,564	17,150	14,218	18,980	27,722	28,630	60,560	44,672	30,368	15,372
Gross Construction	5,796,907	22,368	104,403	350,567	415,701	363,278	581,886	565,291	738,099	1,170,396	780,057	485,564	219,296
Construction Work in Progress		22,368	126,771	477,338	893,039	1,256,317	1,838,203	2,403,494	3,141,593	4,311,990	5,092,046	5,577,610	5,796,907
CWIP Currently In Rates					2,105,781								
September 30, 2014 Actual Incremental CWIP Not Currently In Rates					693,741								

\*Applicable index escalation rates for 2014 are estimated. Escalation is subject to restatement when actual indices for 2014 are final.

Notes:  
2014-2018 AFUDC rate applied

7.27%

The AFUDC rate applied is the current SCE&G rate. AFUDC rates can vary with changes in market interest rates, SCE&G's embedded cost of capital, capitalization ratios, construction work in process, and SCE&G's short-term debt outstanding.



**APPENDIX 3****V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2014**

For comparison purposes, **Appendix 3** provides the schedule of capital costs for the project which was approved by the Commission in Order No. 2012-884 as the Approved Capital Cost of the Units, pursuant to S.C. Code Ann. § 58-33-270(B)(2). **Appendix 3** also reflects the forecast of AFUDC expense based on these adjusted schedules and the AFUDC rates that were current at the time of Order No. 2012-884. **Appendix 3** is intended to provide a fixed point of reference for future revisions and updating. While the schedule of costs contained on **Appendix 3** is subject to revision for escalation, changes in AFUDC rates and amounts, capital cost scheduling contingencies and other contingency adjustments as authorized in Order No. 2009-104(A), no such adjustments have been made to the schedules presented here.

## Appendix 3

PUBLIC VERSION

RESTATEd and UPDATED CONSTRUCTION EXPENDITURES

(Thousands of \$)

## V.C. Summer Units 2 and 3 - Summary of SCE&amp;G Capital Cost Components

Per Order 2012-884

Plant Cost Categories	Total	Actual				Projected							
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Fixed with No Adjustment													
Firm with Fixed Adjustment A													
Firm with Fixed Adjustment B													
Firm with Indexed Adjustment													
Actual Craft Wages													
Non-Labor Costs													
Time & Materials													
Owners Costs													
Transmission Costs													
Total Base Project Costs(2007 \$)	329,512	-	26	724	927	11,964	57,206	56,903	57,508	77,990	64,727	1,537	-
Total Project Escalation	4,548,405	21,723	97,386	319,073	374,810	314,977	613,678	780,753	792,394	647,295	386,537	142,999	56,781
	968,444	-	3,519	20,930	23,741	34,084	99,630	169,425	215,175	183,987	134,815	58,409	24,729
Total Revised Project Cash Flow	5,516,849	21,723	100,905	340,003	398,551	349,061	713,307	950,179	1,007,569	831,281	521,351	201,408	81,510
Cumulative Project Cash Flow(Revised)		21,723	122,629	462,632	861,183	1,210,244	1,923,551	2,873,730	3,881,299	4,712,580	5,233,931	5,435,339	5,516,849
AFUDC(Capitalized Interest)	237,715	645	3,497	10,564	17,150	14,218	20,449	38,384	42,868	40,888	27,518	15,391	6,144
Construction Work in Progress		22,368	126,771	477,338	893,039	1,256,317	1,990,074	2,978,637	4,029,074	4,901,243	5,450,113	5,666,911	5,754,565

**APPENDIX 4**

**V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2014**

**Appendix 4** shows the changes in the inflation indices approved in Order No. 2009-104(A). Included is a ten year history of the Handy-Whitman All Steam Index, South Atlantic Region; the Handy-Whitman All Steam and Nuclear Index, South Atlantic Region; the Handy-Whitman All Transmission Plant Index, South Atlantic Region; and the Chained GDP Index. The change in the relevant indices from the Combined Application is also provided.

# Appendix 4, Chart A

## Inflation Indices, Chart A

HW All Steam Generation Plant Index, July 2014

<u>Year</u>	<u>Index</u>	<u>Yr/Yr change</u>	<u>Three Year Average</u>	<u>Five Year Average</u>	<u>Ten Year Average</u>
2014	611	2.52%	2.16%	3.21%	4.35%
2013	596	2.05%	2.91%	2.18%	4.77%
2012	584	1.92%	3.82%	3.60%	4.67%
2011	573	4.75%	2.31%	4.75%	
2010	547	4.79%	3.78%	5.31%	
2009	522	-2.61%	4.74%	5.50%	
2008	536	9.16%	8.13%	7.35%	
2007	491	7.68%	6.99%	5.74%	
2006	456	7.55%	6.64%	4.75%	
2005	424	5.74%	4.49%		
2004	401	6.65%	3.50%		
2003	376	1.08%			
2002	372	2.76%			
2001	362				

<b>BLRA</b>	<b>Order 2010-12</b>	<b>Order 2011-345</b>	<b>Order 2012-884</b>	<b>Update</b>
Filing	<u>Jan-09</u>	<u>Jul-10</u>	<u>Jan-12</u>	<u>Jul-14</u>
<u>Jul-07</u>				
7.68%	4.83%	4.79%	4.51%	2.52%
5.74%	7.19%	5.31%	3.91%	3.21%

**HW All Steam Index:**  
 One year  
 Five Year

## Appendix 4, Chart B

### Inflation Indices, Chart B

HW All Steam and Nuclear Generation Plant Index, July 2014

<u>Year</u>	<u>Index</u>	<u>Yr/Yr change</u>	<u>Three Year Average</u>	<u>Five Year Average</u>	<u>Ten Year Average</u>
2014	611	2.52%	2.22%	3.21%	4.38%
2013	596	2.05%	2.97%	2.22%	4.79%
2012	584	2.10%	3.82%	3.64%	4.70%
2011	572	4.76%	2.31%	4.76%	
2010	546	4.60%	3.78%	5.32%	
2009	522	-2.43%	4.82%	5.55%	
2008	535	9.18%	8.15%	7.37%	
2007	490	7.69%	7.00%	5.75%	
2006	455	7.57%	6.66%	4.77%	
2005	423	5.75%	4.50%		
2004	400	6.67%	3.50%		
2003	375	1.08%			
2002	371	2.77%			
2001	361				

<b>BLRA</b>
<b>Filing</b>
<b>Jul-07</b>
<b>7.69%</b>
<b>5.75%</b>

#### HW All Steam/Nuclear Index:

One year  
Five Year

Order 2010-12 <u>Jan-09</u>	Order 2011-345 <u>Jul-10</u>	Order 2012-884 <u>Jan-12</u>	Update <u>Jul-14</u>
4.84%	4.60%	4.52%	2.52%
7.20%	5.32%	3.87%	3.21%

## Appendix 4, Chart C

### Inflation Indices, Chart C

HW All Transmission Plant Index, July 2014

<u>Year</u>	<u>Index</u>	<u>Yr/Yr change</u>	<u>Three Year Average</u>	<u>Five Year Average</u>	<u>Ten Year Average</u>
2014	604	1.68%	1.07%	2.63%	4.05%
2013	594	1.71%	2.13%	1.09%	4.91%
2012	584	-0.17%	3.25%	2.56%	4.71%
2011	585	4.84%	1.30%	4.36%	
2010	558	5.08%	2.71%	5.23%	
2009	531	-6.02%	3.96%	5.48%	
2008	565	9.07%	9.02%	8.73%	
2007	518	8.82%	8.11%	6.86%	
2006	476	9.17%	8.58%	5.25%	
2005	436	6.34%	5.43%		
2004	410	10.22%	3.59%		
2003	372	-0.27%			
2002	373	0.81%			
2001	370				

<b>BLRA</b>
Filing
Jul-07

Order 2010-12  
Jan-09

Order 2011-345  
Jul-10

Order 2012-884  
Jan-12

Update  
Jul-14

#### HW All Transmission Plant Index

One year  
Five Year

8.82%
6.86%

7.41%  
8.60%

5.08%  
5.23%

2.48%  
3.00%

1.68%  
2.63%

## Appendix 4

## Inflation Indices, Chart D

GDP Chained Price Index, 2014

SERIES TYPE	UNIT	SHORT LABEL	ID	2008	2009	2010	2011	2012	2013	2014
<b>Chained Price Index--Gross Domestic Product</b>										
(2005=100) Chained price index-gross domestic product, Source: BEA, Units: index- 2005=100.0										
U.S. Macro - 10 Year Baseline			45158933	99.21	99.97	100.75	102.79	104.70	106.33	107.98
Annual Percent change					0.77%	0.78%	2.02%	1.86%	1.56%	1.55%
3-Year Annual Percent change					1.67%	1.47%	1.19%	1.55%	1.81%	1.66%
5-Year Annual Percent change					2.51%	2.11%	1.70%	1.67%	1.40%	1.55%
<b>Consumer Price Index, All-Urban</b>										
Index										
U.S. Macro - 10 Year Baseline										
Percent change			45158182	2.15	2.15	2.18	2.25	2.30	2.33	2.36
3-Year Annual Percent change					0.00%	1.40%	3.21%	2.22%	1.30%	1.29%
5-Year Annual Percent change					2.17%	1.68%	1.54%	2.28%	2.25%	1.60%
					2.62%	2.23%	2.22%	2.10%	1.63%	1.88%
<b>Producer Price Index--Finished Goods</b>										
(1982=1.0) Producer price index-finished goods, Source: BLS, Units: Index- 1982=1.0										
U.S. Macro - 10 Year Baseline			45159751	1.77	1.73	1.80	1.91	1.94	1.97	2.00
Percent change					-2.26%	4.05%	6.11%	1.57%	1.55%	1.52%
3-Year Annual Percent change					2.64%	2.53%	2.63%	3.91%	3.08%	1.55%
5-Year Annual Percent change					3.03%	2.90%	3.61%	3.04%	2.20%	2.96%

BLRA Filing Jul-07
--------------------------

Order 2010-12 Jan-09	Order 2011-345 Jul-10	Order 2012-884 Jan-12	Update Jul-14
2.24%	0.43%	2.11%	1.55%
2.86%	1.97%	1.89%	1.55%

## GDP Chained Price Index

One year  
Five Year

**APPENDIX 5**

**V. C. Summer Nuclear Station Units 2 & 3**

**Quarterly Report to the South Carolina Office of Regulatory Staff  
Submitted by South Carolina Electric & Gas Company  
Pursuant to Public Service Commission Order No. 2009-104(A)**

**Quarter Ending September 30, 2014**

**Appendix 5** indicates those LARs that have been submitted by SCE&G to the NRC for review. Included is the title of each LAR, a brief description of the change(s) associated with the LAR, the date the LAR was submitted to the NRC, and the status of the requests.



**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 12-01 - Additional Electrical Penetration Assemblies	Provide additional penetrations of the Containment Vessel to allow sufficient space for electrical and instrument cables.	8/29/2012	Approved on 7/1/2013
LAR-12-02 – Tier 1 Table 3.3-1 Discrepancies – PAR Utilized	Conform the current ITAAC standards used to verify the shield building wall thickness to align with those approved in DCD Rev. 19	9/26/2012	Approved on 5/30/2013
LAR 13-01 - Basemat Shear Reinforcement Design Spacing Requirements - PAR Utilized	Clarify the provisions for maximum spacing of the shear reinforcement in the basemat below the auxiliary building to be consistent with requirements shown in existing FSAR figures.	1/15/2013	Approved on 2/26/2013
LAR 13-02 - Basemat Shear Reinforcement Design Details - PAR Utilized	Revises the requirements for development of basemat shear reinforcement in the licensing basis from ACI 349 Appendix B to ACI 318-11, Section 12.6. The use of ACI 318 criteria for headed reinforcement results in longer shear ties and thicker concrete in areas below the elevator pits and a sump in the nuclear island basemat.	1/18/2013	Approved on 3/1/2013
LAR 13-03 - Turbine Building Eccentric and Concentric Bracing	Revises the turbine building main area to use a mixed bracing system using eccentrically and concentrically braced frames as a means of preventing the turbine building from collapsing onto the Nuclear Island (NI) during a seismic event. The structural design code is also changed to a code that includes adequate provisions for the new bracing system.	2/7/2013	Approved on 7/1/2013
LAR 13-04 - Reconciliation of Tier 1 Valve Differences	Reconciles valve related information contained in Tier 1 material to be consistent with corresponding Tier 2 material currently incorporated in the UFSAR.	2/7/2013	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

## Appendix 5

PUBLIC VERSION

## V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

Topic	Description of Change	Submittal Date	Status
LAR 13-05 - Structural Modules Shear Stud Size and Spacing	Revises Note 2 of UFSAR Figure 3.8.3-8, Sheet 1, which presents typical structural wall module details. This information needs to be changed to be consistent with the design basis calculations.	2/14/2013	Approved on 5/23/2013
LAR 13-06 - Primary Sampling System Changes	Alters the design of the Primary Sampling System (PSS) by replacing a check valve with a solenoid-operated gate valve, modifying the PSS inside-containment header and adding a PSS containment penetration.	2/7/2013	Approved on 8/22/2013
LAR 13-07 - Changes to the Chemical and Volume Control System (CVS)	Alters the design of the Chemical and Volume Control System (CVS) by adding/changing valves, separating the zinc and hydrogen injection paths and relocating the zinc injection point.	3/13/2013	Approved on 2/24/2014
LAR 13-08 - Module Obstructions and Details	Withdrawn after review with NRC-see Letter NND-13-202. <i>Superseded by LAR 13-20.</i>	2/28/2013	Withdrawn
LAR 13-09 - Annex/Radwaste Building Layout Changes	Updates column line numbers on Annex Building Figures and changes the configuration of the Radwaste building by adding three bunkers for storage and merging two rooms.	2/27/2014	Under NRC Review
LAR 13-10 - Human Factors Engineering Integrated System Validation Plan	Revises referenced document APP-OCS-GEH-320 from Revision D to Revision 2.	3/13/2013	Approved on 7/31/2014
LAR 13-11 - NI Wall Reinforcement Criteria -PAR Utilized	Revises structural code criteria for anchoring reinforcement bar within the NI walls (adopts ACI-318 for this purpose).	3/26/2013	Approved on 6/6/2013

The gaps in LAR number sequencing are due to the order of submittal to the NRC.

## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-12 - Fire Area Boundary Changes	Revises various information to support fire area boundaries (HVAC information, stairwell changes, and other layout changes).	7/17/2013	Approved on 9/9/2014
LAR 13-13 - Turbine Building Layout Changes	Revises the door location, clarifies column line designations, changes floor to ceiling heights and increases elevations and wall thickness in certain areas.	7/30/2013	Approved on 5/12/2014
LAR 13-14 - Turbine Building Battery Room and Electrical Changes	Revises the Non-Class 1E dc and Uninterruptible Power Supply System (EDS) and Class 1E dc and Uninterruptible Power Supply System (IDS) by: (1) Increasing EDS total equipment capacity, component ratings, and protective device sizing to support increased load demand, (2) Relocating equipment and moving Turbine Building (TB) first bay EDS Battery Room and Charger Room. The floor elevation increases from elevation 148'-0" to elevation 148'-10" to accommodate associated equipment cabling with this activity, and (3) Removing the Class 1E IDS Battery Back-up tie to the Non-Class 1E EDS Battery.	10/2/2013	Under NRC Review
LAR 13-15 - Operator Break Room Configuration	No description provided. This is no longer a LAR.	Changed to a Non-LAR Departure	
LAR 13-16 - Revision to Human Factors Engineering Design Verification Plan (GEH-120)	Revises referenced document APP-OCS-GEH-120 from Revision B to Revision 1.	9/25/2013	Approved on 7/31/2014

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-17 - Revision to Human Factors Engineering Task Support Verification (GEH-220)	Revises referenced document APP-OCS-GEH-220 from Revision B to Revision 1.	9/25/2013	Approved on 7/31/2014
LAR 13-18 - Revision to Human Factors Engineering Issue Resolution Plan	Revises APP-OCS-GEH-420 to make a number of changes in order to refine the process for capturing and resolving Human Engineering Discrepancies (HEDs) from that process document as described in Revision B.	10/3/2013	Approved on 7/31/2014
LAR 13-19 - Revision to Human Factors Engineering Plan	Revises APP-OCS-GEH-520 to make a number of changes in order to confirm aspects of the HSI and OCS design features that could not be evaluated in other Human Factors Engineering (HFE) V&V activities.	10/3/2013	Approved on 7/31/2014
LAR 13-20 - Modules / Stud Channel Obstructions Revision	Revises requirements for design spacing of shear studs and wall module trusses and the design of structural elements of the trusses such as angles and channels. These revisions are to address interferences and obstructions.	7/17/2013	Approved on 11/19/2013
LAR 13-21 - CA03 Module Design Differences	Corrects inconsistencies between Tier 2* and Tier 2 information.	2/2/2014	Under NRC Review
LAR 13-23 - Reinforced Concrete (RC) to Steel Plate Composite Construction (SC) Connections	The proposed amendment would revise Tier 2* and associated Tier 2 material related to the design details of connections in several locations between the steel plate composite construction (SC) used for the shield building and the standard reinforced concrete (RC) walls, floors, and roofs of the auxiliary building and lower walls of the shield building.	7/11/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*



## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-25 - Tier 1 Editorial and Consistency Changes	Revises information to correct consistency and editorial issues. This submittal does not contain any technical changes.	7/2/2013	Approved on 7/31/2014
LAR 13-26 - EP Rule Changes	Revision to the Emergency Plan in order to comply with regulatory changes enacted by the Nuclear Regulatory Commission (NRC) in the Final Rule. These changes include the addition of text that 1) clarifies the distance of the Emergency Operations Facility (EOF) from the site, 2) updates the content of exercise scenarios to be performed at least once each exercise cycle, and 3) requires the Evacuation Time Estimate (ETE) to be updated annually between decennial censuses.	12/17/2013	Approved on 6/20/2014
LAR 13-32 - WLS Changes	Clarifies the description of the WLS, including changing depiction of valves to be consistent with Tier 1 figure conventions, ensuring consistency between Tier 1 and Tier 2 descriptions, and clarifying the safety classification of the drain hubs.	8/30/2013	Approved on 1/8/2014
LAR 13-33 - Passive Core Cooling System (PXS) Condensate Return	The proposed amendment would revise the plant-specific Tier 1 and associated Tier 2 material to increase the efficiency of the return of condensate utilized by the passive core cooling system (PXS) to the in-containment refueling water storage tank (IRWST) to support the capability for long term cooling.	7/8/2014	Under NRC Review
LAR 13-34 - Clarification of Tier 2* Material in HFE Documents	The proposed changes reclassify portions of the five Tier 2* Human Factors (HF) Verification & Validation (V&V) planning documents listed in Updated Final Safety Analysis Report (UFSAR) Table 1.6-1 and Chapter 18, Section 18.11.2.	3/19/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 13-36 - CIM / DAS Diversity Clarification	The requested amendment proposed to depart from approved AP1000 Design Control Document (DCD) Tier 2* information as incorporated into the Updated Final Safety Analysis Report (UFSAR) by clarifying the position on design diversity, specifically human diversity, as related to the Component Interface Module (CIM) and Diverse Actuation System (DAS) design.	9/11/2014	Under NRC Review
LAR 13-37 - VCSNS Units 2 & 3 Tech Spec Upgrade	Revises Technical Specifications to closer align with the guidance of the Technical Specifications Task Force (TSTF) Writer's Guide for Plant-Specific Improved Technical Specifications, TSTF-GG-05-01, Revision 1, and with NUREG-1431, Standard Technical Specifications - Westinghouse Plants as updated by NRC approved generic changes.	12/4/2013	Under NRC Review
LAR 13-38 - ACI Code Compliance with Critical Sections Higher Elevations	Withdrawn after review with NRC-see Letter NND-13-0745.	11/7/2013	Withdrawn
LAR 13-41 - Coating Thermal Conductivity	Revises Design Control Document (DCD) Tier 2 information as incorporated into the Updated Final Safety Analysis Report (UFSAR) to allow use of a new methodology to determine the effective thermal conductivity resulting from oxidation of the inorganic zinc (IOZ) used in the containment vessel coating system.	11/26/2013	Under NRC Review
LAR 13-42 - Tier 1 Editorial and Consistency Changes #2	Allows various changes to correct editorial errors in Tier 1 and promote consistency with the Updated Final Safety Analysis Report (Tier 2 information).	5/20/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

## Appendix 5

### V.C. Summer Units 2 and 3 License Amendment Requests (LARs)

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 14-01 - Auxiliary Building Roof and Floor Details	Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) to identify design details of the floors of the auxiliary building that may vary due to design and loading conditions, in accordance with code requirements.	4/3/2014	Approved on 7/18/2014
LAR 14-03 - Tier 2* Editorial and Clarification Changes	Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by making editorial and consistency corrections.	6/12/2014	Under NRC Review
LAR 14-05 - Containment Internal Structural Module Design Details	The requested amendment proposes to depart from Tier 2* information in the Updated Final Safety Analysis Report (UFSAR), plant-specific Tier 1 and corresponding COL Appendix C information, and involved UFSAR Tier 2 information to address changes in the UFSAR and design documents related to containment internal structural wall module design details.	7/17/2014	Under NRC Review
LAR 14-06 - Enclosures for Class 1E Electrical Penetrations in Middle Annulus	Departs from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by eliminating the Division A fire zone enclosure and adding three new fire zones for Divisions B, C, and D Class 1 E electrical penetration rooms.	6/20/2014	Under NRC Review
LAR 14-07 - CA04 Structural Module ITAAC Dimensions Change	The proposed amendment would allow changes to adjust the concrete wall thickness tolerances of four Nuclear Island walls found in Tier 1.	9/25/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*

**Appendix 5**  
**V.C. Summer Units 2 and 3 License Amendment Requests (LARs)**

PUBLIC VERSION

Topic	Description of Change	Submittal Date	Status
LAR 14-09 - Turbine Building Switchgear Room and Office Layout Changes	The requested amendment would depart from VCSNS Units 2 and 3 plant-specific Design Control Document (DCD) Tier 2* material contained within the Updated Final Safety Analysis Report (UFSAR) by relocating fire area rated fire barriers due to changes to the layout of the switchgear rooms and office area in the turbine building. The requested amendment would also depart from plant-specific DCD Tier 2 material that involves the proposed Tier 2* departures.	9/18/2014	Under NRC Review

*The gaps in LAR number sequencing are due to the order of submittal to the NRC.*